

## Businessman hopes rooftop vegetation will be a growing trend

by Mike Lee

In a gritty industrial section of San Diego, "plantscaper" Jim Mumford is putting down roots. On his roof.

The result, which will come to life this morning, is an elevated oasis in a desert of concrete and metal.

ROOFTOP GARDEN - Jim Mumford and his daughter Allie, 8, spread a layer of decorative bark on the roof of his San Diego business, Good Earth Plant Co. CNS Photo by Charlie Neuman. Trucks rumble below. Small planes buzz past wispy clouds above. On one recent afternoon, Mumford settled into a lawn chair on what he bills as the first vegetated roof on a commercial building in the county.

"We've planted a seed," said Mumford.

The roof's potential environmental benefits include reducing storm water runoff, insulating the building and fighting global warming because its plants take carbon dioxide out of the atmosphere. Mumford, owner of the Good Earth Plant Co., isn't shy about one other ambition: to become the region's go-to guy for this kind of green space.

Experts in the expanding field of ecologically friendly designs don't expect hordes of Mumford's neighbors to join him any time soon. But the idea of vegetated roofs, already popular in Chicago, New York and elsewhere, is growing in Southern California.

"You are going to see it more and more," said Pat Caughey of San Diego, president of the American Society of Landscape Architects. "It isn't as technically difficult as it used to be."

The society installed a vegetated roof last year at its headquarters in Washington, D.C., and it's measuring rainfall retention and insulation benefits while assessing which plants fare the best.

Even without years of data, Caughey is bullish on the project. "As a profession, we wanted to demonstrate the value of green-roof technology," he said. "It's become a great case study."

The Quail Botanical Gardens in Encinitas, Calif., has planted two small roofs in recent years, one on a potting shed and the other on a restroom.

"Not many people would feature their restroom as a highlight ... but ours has become that," said Julian Duval, executive director of the nonprofit operation.

On a much larger scale, the Palomar Pomerado Health district plans to break ground on an Escondido, Calif., hospital complex that incorporates sprawling vegetated roofs as part of a plan that covers energy consumption, waste reduction and water conservation.

"We are creating a healing environment," said Andy Hoang, a spokesman for the district. "We want our patients to be connected to nature."

Last year, the Centre City Development Corp. adopted incentives to encourage environmentally friendly design elements - including vegetated roofs - in downtown San Diego. The idea has proved popular, though none of the projects is completed.

One hang-up has been a lack of examples of how to make a vegetated roof look good and function properly. That could change with Mumford's installation.

"I think having a local project that takes the lead like this will definitely help with the naysayers," said Stephen L. Kapp, San Diego chapter president of the U.S. Green Building Council.

One other obstacle is providing irrigation for vegetated roofs during the summer.

That was a concern for Mumford, who installed a sprinkler system on his 1,600-square-foot roof garden to take care of the young, drought-tolerant plants. He selected primroses, native grasses, cactuses and desert marigolds.

Finding plants was a natural for Mumford, who has spent 30 years adding greenery to homes and offices in the region.

Even though he's a proponent of rooftop greenery - the kind in pots and planters - Mumford was skeptical about planting an entire roof.

"As I looked at it a little harder, I thought, 'This is basically a giant pot,'" he said.

So about a year ago, Mumford started developing construction plans and making friends with companies and experts who could help. After making sure that his roof could support the weight - roughly 24,000 pounds when saturated - he added layers of synthetic materials engineered to protect the building while storing water for plants.

On top of those layers, Mumford spread about 4 inches of what he said is a proprietary soil mix that includes his special ingredient, bat guano.

Many of the products were donated, Mumford said, but he estimated the bill would have been \$30,000 or more if he'd paid for everything.

Besides keeping the plants alive, Mumford's big challenge will be trying to measure the roof's benefits.

He'll be looking for a drop in his power bills and the amount of storm water runoff from his roof. Mumford also figures he'll double or triple the life of his roof because it's protected from ultraviolet rays.

If those indicators and others are as good as advertised, the business potential is huge. But Mumford tries to keep a level head about the uncharted industry.

"If nothing else comes of this, at least I have made a ... place for my employees to have lunch," he said.

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